

KATZ — 09/831,049  
Client/Matter: 060258-0278027

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A data transmission method used in a radio system comprising a subscriber terminal and at least one base station which transmits signals to the subscriber terminal by means of its antenna, the method comprising:

determining the quality of signals received by the subscriber terminal by comparing the received signals with at least one signal quality threshold level,

sending to the base station, which transmitted a signal that exceeded the threshold, information on the antennas which transmitted the signal that exceeded the threshold, or information on the transmission directions from which the signal that exceeded the threshold were received, and

~~selecting from the antennas, which transmitted the signal that exceeded the threshold, an antenna or antennas to continue transmission of the signal to said subscriber terminal, or~~  
selecting from the transmission directions, from which the signal that exceeded the threshold were received, a transmission direction or directions, in which to continue transmission of the signal to said subscriber terminal.

2. (Currently Amended) A data transmission method used in a radio system comprising a subscriber terminal and at least one base station which transmits signals to the subscriber terminal by means of its antenna, the method comprising:

determining the quality of signals received by the subscriber terminal by comparing the received signals with at least one signal quality threshold level, and

when only one signal exceeds the threshold, sending to the base station, which transmitted the signal that exceeded the threshold, a command to use, when transmitting a signal to said subscriber terminal, ~~the antenna with which the signal that exceeded the threshold was transmitted, or the transmission direction in which the signal that exceeded the~~ threshold was transmitted.

3. (Previously Presented ) A method as claimed in claim 1, wherein when the quality of several signals is within acceptable levels, information on the quality of the signals is sent

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to the base station, and the base station can, on the basis of the information, decide which antenna or direction it will use to continue transmitting signals.

4. (Previously Presented) A data transmission method used in a radio system comprising a subscriber terminal and at least one base station which transmits signals to the subscriber terminal by means of its antenna, the method comprising:

determining the quality of signals received by the subscriber terminal by comparing the received signals with at least one signal quality threshold level,

sending to the base station, which transmitted a signal that exceeded the threshold, information on the antennas which transmitted the signal that exceeded the threshold, or information on the transmission directions from which the signal that exceeded the threshold were received, and

selecting from the antennas, which transmitted the signal that exceeded the threshold, an antenna or antennas to continue transmission of the signal to said subscriber terminal, or selecting from the transmission directions, from which the signal that exceeded the threshold were received, a transmission direction or directions, in which to continue transmission of the signal to said subscriber terminal,

wherein the signals transmitted by the base stations are amplified by amplifiers, and the antenna which is connected to one of the amplifiers with the lowest load is selected as the transmission antenna.

5. (Previously Presented) A data transmission method used in a radio system comprising a subscriber terminal and at least one base station which transmits signals to the subscriber terminal by means of its antenna, the method comprising:

determining the quality of signals received by the subscriber terminal by comparing the received signals with at least one signal quality threshold level,

sending to the base station, which transmitted a signal that exceeded the threshold, information on the antennas which transmitted the signal that exceeded the threshold, or information on the transmission directions from which the signal that exceeded the threshold were received, and

selecting from the antennas, which transmitted the signal that exceeded the threshold, an antenna or antennas to continue transmission of the signal to said subscriber terminal, or selecting from the transmission directions, from which the signal that exceeded the threshold

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were received, a transmission direction or directions, in which to continue transmission of the signal to said subscriber terminal,

wherein the signals transmitted by the base stations are amplified by amplifiers before transmission, and the selection decision is made on the basis of the load situation of the amplifiers.

6. (Previously Presented) A method as claimed in claim 1, wherein if the quality of a signal received by the subscriber terminal is below a lowest acceptable quality level, information on the quality of that signal is sent to the base station which, after receiving the information, interrupts transmission of that signal.

7. (Previously Presented) A method as claimed in claim 1, wherein signals are transmitted to the subscriber terminal by means of beams, and a final decision on the transmission antenna, transmission direction or beam to be used by the base station is made in the base station.

8. (Previously Presented) A method as claimed in claim 2, wherein signals are transmitted to the subscriber terminal by means of beams, and a final decision on the transmission antenna, transmission direction or beam to be used by the base station is made in the subscriber terminal.

9. (Previously Presented) A method as claimed in claim 1, wherein the transmission beam of the base station causing the least interference is selected and the selection decision is made in the base station.

10. (Previously Presented) A method as claimed in claim 2, wherein the transmission beam of the base station causing the least interference is selected and the selection decision is made in the subscriber terminal.

11. (Currently Amended) A radio system comprising at least one subscriber terminal and at least one base station comprising an antenna by means of which the base station transmits signals to the subscriber terminal, wherein the subscriber terminal comprises a

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measuring means which determines the quality of signals received by the subscriber terminal by comparing the received signals with at least one signal quality threshold level,

the subscriber terminal sends to the base station, which transmitted a signal that exceeded the threshold, information on the antennas by which the signal that exceeded the threshold were transmitted, or information on the transmission directions from which the signal that exceeded the threshold were received,

the base station comprises a means ~~which selects from the antennas, which transmitted the signal that exceeded the threshold, an antenna or antennas with which to continue to transmit the signal to said subscriber terminal, or the means which~~ selects from the transmission directions of the signal, which exceeded the threshold, a transmission direction or directions in which the base station continues to transmit the signal.

12. (Currently Amended) A radio system comprising at least one subscriber terminal and at least one base station comprising an antenna by means of which the base station transmits signals to the subscriber terminal, wherein

the subscriber terminal comprises a measuring means which determines the quality of signals received by the subscriber terminal by comparing the received signals with at least one signal quality threshold level, and

when only one signal exceeds the threshold, the subscriber terminal sends to the base station, which transmitted the signal that exceeded the threshold, a command to use, when transmitting a signal to said subscriber terminal, ~~the antenna with which the signal that exceeded the threshold was transmitted, or the transmission direction in which the signal that~~ exceeded the threshold was transmitted.

13. (Previously Presented) A radio system as claimed in claim 11, wherein when the quality of several signals is within acceptable levels, the subscriber terminal sends to the base station information, on the basis of which the base station can decide which antenna or direction the base station will use to continue transmitting the signal.

14. (Previously Presented) A radio system comprising at least one subscriber terminal and at least one base station comprising an antenna by means of which the base station transmits signals to the subscriber terminal, wherein

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the subscriber terminal comprises a measuring means which determines the quality of signals received by the subscriber terminal by comparing the received signals with at least one signal quality threshold level,

the subscriber terminal sends to the base station, which transmitted a signal that exceeded the threshold, information on the antennas by which the signal that exceeded the threshold were transmitted, or information on the transmission directions from which the signal that exceeded the threshold were received,

the base station comprises a means which selects from the antennas, which transmitted the signal that exceeded the threshold, an antenna or antennas to continue to transmit the signal to said subscriber terminal, or the means selects from the transmission directions of the signal, which exceeded the threshold, a transmission direction or directions in which the base station continues to transmit the signal, and

wherein the base station comprises amplifiers which amplify the signals before their transmission, and the means selects as the transmission antenna of the base station the antenna or antennas which are connected to the amplifier with the smallest load.

15. (Previously Presented) A radio system comprising at least one subscriber terminal and at least one base station comprising an antenna by means of which the base station transmits signals to the subscriber terminal, wherein

the subscriber terminal comprises a measuring means which determines the quality of signals received by the subscriber terminal by comparing the received signals with at least one signal quality threshold level,

the subscriber terminal sends to the base station, which transmitted a signal that exceeded the threshold, information on the antennas by which the signal that exceeded the threshold were transmitted, or information on the transmission directions from which the signal that exceeded the threshold were received,

the base station comprises a means which selects from the antennas, which transmitted the signal that exceeded the threshold, an antenna or antennas to continue to transmit the signal to said subscriber terminal, or the means selects from the transmission directions of the signal, which exceeded the threshold, a transmission direction or directions in which the base station continues to transmit the signal, and

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wherein the base station comprises amplifiers which amplify the signals before their transmission, and the means makes the selection decision on the basis of the load situation of the amplifiers.

16. (Previously Presented) A radio system as claimed in claim 11, wherein if the quality of a signal received by the subscriber terminal is below a lowest acceptable quality level, the subscriber terminal sends information on the quality of that signal to the base station which, after receiving the information, stops transmitting that signal with the antenna by which the signal that was below the threshold was transmitted.

17. (Previously Presented) A radio system as claimed in claim 11, wherein the base station transmits signals to the subscriber terminal by means of beams, and a final decision on the transmission antenna, transmission direction or beam to be used in the base station is made in the base station.

18. (Previously Presented) A radio system as claimed in claim 12, wherein the base station transmits signals to the subscriber terminal by means of beams, and a final decision on the transmission antenna, transmission direction or beam to be used in the base station is made in the subscriber terminal.

19. (Previously Presented) A radio system as claimed in claim 11, wherein the base station comprises a means which selects as the transmission beam of the base station the transmission beam causing the least interference.

20. (Previously Presented) A radio system as claimed in claim 12, wherein the subscriber terminal comprises a means which selects as the transmission beam of the base station the transmission beam causing the least interference.